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Remarks on the Group Cinnamomeæ of the North American Roses.

By G. N. Best.

These remarks are based on an examination of the large and valuable collection of the Geological and Natural History Survey of Canada, Prof. John Macoun; the collections of Lafayette College, Prof. T. C. Porter, and of the Philadelphia Academy of Natural Sciences, Mr. J. H. Redfield; contributions from Rev. R. E. Schuh, Minnesota; Mr. Chas. V. Piper, Seattle, Washington; Dr. N. L. Britton, Dr. Sereno Watson, Mr. A. S. Hitchcock, St. Louis, Mo., and Mr. O. A. Farwell, Mich., to all of whom I tender my sincere acknowledgments.

To M. Crépin, the distinguished rhodologist of Brussels, I am likewise under many obligations, not only for rare specimens, illustrative of the species of the Old World, by which I was enabled to compare allied forms of this country, but also for making me acquainted with the results of his very extensive and valuable observations. While the views herein expressed are believed to be largely in accord with those entertained by him, the author, however, is solely responsible for them.

The group Cinnamomeæ, enlarged so as to include the Gymnocarpæ and the Alpinæ, is confessedly a difficult one with which to deal. Scarcely a species but occupies more or less debateable ground. The geographical distributions are far from being accurately known. In this respect the best that can often be done is an approximation. Much time and patient labor are yet re-

quired before satisfactory results can be attained. These remarks are therefore to be regarded as strictly preliminary.

The importance of good material is so great that a few suggestions as to collecting, it is hoped, will be pardonable. A small flowering or fruiting branch makes a beautiful specimen, but for systematic study it is often quite useless, in that it fails to furnish some of the more essential characters. Specimens should be collected either in flower or in fully matured fruit—just before the falling of the leaves; the latter is to be preferred. A few of the younger, sterile growths of the season should be included. Since stoutness or depauperateness modifies very markedly the characters, it is desirable to collect from both. When possible, the whole bush should be pressed, dividing it in sections if necessary. At all events, enough of the stem should be secured to show the normal arrangement of the spines; this not infrequently varies in different parts of the bush.

Few plants are more strikingly modified by differences in environment than roses. Even the younger growths appear quite different from the older, so much so indeed as to cause them to be taken for different species. A knowledge, therefore, of the value of characters is desirable. Quite contrary to what was once thought, the varying degrees of pubescence, glaucousness, glandulosity, and, to some extent, of prickles, possess little diagnostic value; and are to be considered most frequently as accidents of growth depending on peculiarities of soil and location for their development. Not that they are wholly devoid of value, but are so only when taken in connection with characters of the first order.

The larger prickles, commonly but erroneously called spines, furnish important indications, not so much by their shape and size, as by their arrangement on the stem and branches. Valuable as this character is, there is no other that taxes more the experience and judgment of the rhodologist. In rank bushes the spines may be stout and curved; in depauperate slender and straight, yet belong to the same species. They are frequently absent from bushes to which they normally belong, and this from no known cause. The friction of high water often removes them from such as grow on the banks of streams or low places subject

to inundations. It is not rare to find geminate spines grading to single ones on flowering branches, thus appearing and in fact being alternate. On stems normally devoid of spines, it is not uncommon to see two or more of the prickles about the nodes somewhat enlarged. This condition leads to the error of taking them for true geminate spines, which they are not. A little patient study, however, usually suffices to clear up the difficulty in distinguishing the normal type

The behaviour of the sepals during anthesis and the maturing of the fruit, likewise furnish valuable indications, but not so much as do their adnation. They may be persistent on the fruit when fully matured; they may be deciduous by a clear circumcision at their base, or through the apex of the fruit. It is sometimes difficult, not to say impossible, to distinguish the mode of adnation in immature fruit. Sepals are either entire or lobed; when the outer are but slightly lobed, it should be regarded as simply a passing variation from the entire form.

Beyond the mere fact that the styles may be free or connate, little of practical importance has accrued from a very careful study of them. While quite variable, the leaflets vary around a type which is quite constant in the same species. In the more glandular forms, the toothing may be compound-glandular or serrulate, while in those less resinous it may be nearly or quite simple. The stipules, modified leaflets, are characters of varying import. In some groups and in some species they possess diagnostic value; in others they have little significance. It is by their general shape rather than by their width they merit attention. In drying they may become involute, revolute or remain plane. Taking them all in all, they do not possess the value usually allowed them.

The petals, the habit of the bush, its in-ground ramifications, the shape, size and color of the fruit, the number, shape and size of the seed, although usually of secondary importance, yet frequently furnish valuable indications. The insertion of the ovules, as recently pointed out by M. Crépin, is worthy of more than a passing notice. This may be either strictly basil or basilo-parietal. In the Cinnamomeæ it is the latter; in the Carolinæ it is basil. It is needless to say that in roses as in other plants, it is more by the

tout ensemble than by any single character that a correct knowledge of its position is to be attained.

CLASSIFICATION.

ROSA, Tourn.

GROUP CINNAMOMEÆ,* CREPIN.

Styles free, included; insertion of the ovules basilo-parietal; sepals usually erect and persistent on the matured fruit; inflorescence unifloral or multifloral, with a dilated bract on the primary pedicels; spines straight or curved, geminate or alternate, usually mingled with setaceous prickles, rarely unarmed; stem erect or ascending; stipules adnate to the common petiole; leaflets 5 to 9 on flowering branches.

Sub-Group GYMNOCARPÆ: sepals early deciduous with the apex of the fruit; stems more or less prickly.

1. *Rosa gymnocarpa.*

Sub-Group ALPINÆ: sepals erect and persistent on matured fruit; stems either smooth or armed with scattered prickles, rarely with geminate spines.

2. *Rosa blanda.*
3. *Rosa blanda*, var. *Arkansana.*
4. *Rosa acicularis.*

Sub-Group EUCINNAMOMEÆ: sepals erect and persistent on matured fruit: stems armed with geminate, rarely alternate spines; more or less prickly.

5. *Rosa Nutkana.*
6. *Rosa pisocarpa.*
7. *Rosa Californica.*
8. *? Rosa spithamæa.*

1. *Rosa gymnocarpa*, Nuttall, 1840, ranges from British Columbia to California, and eastward to Idaho and Montana. Its peculiar dehiscence, so far as is known, distinguishes it from all other North American roses. Two Asiatic species, *Rosa Alberti*, Regel (1883), and *Rosa Beggeriana*, Schrenck (1841), are, as I am informed by M. Crépin, the only roses of this sub-group in the Old World. To know the actual relations of these three closely allied species would be extremely interesting.

2. *Rosa blanda*, Aiton 1789 (*? R. Virginiana*, Miller, 1768) ranges from Newfoundland westward through Quebec, Ontario, New York, to Wisconsin and Illinois, where it passes into var. *Arkansana.* The stem of the type is either smooth or sparingly prickly; the sepals, stipules and leaflets rarely glandular. It is distinguished from the *Carolinæ* by the absence of geminate spines, by its erect, persistent sepals and by the basilo-parietal insertion of its ovules.

*Journal of the Royal Hort. Soc. Part III. Vol. XI., Oct. 1889,

3. *Rosa blanda*, Ait. var. *Arkansana*, (Porter). Although frequently observed before, it was first described by Dr. Porter as *Rosa Arkansana** from specimens collected on the banks of the Arkansas River by Mr. Brandagee. The original specimen, in flower, is in the herbarium of Lafayette College. Bush apparently low, 1 to 2 feet high; stem, foliage and fruiting receptacles glaucous; flowers corymbose; sepals entire; bracts lanceolate; leaflets 7 to 11, mostly 9, oblong-elliptical to oblanceolate, somewhat cuneate at base; stipules rather broad; stem prickly.

The stipules are as often broad as narrow; the outer sepals are rarely lobed, probably not much more frequently than in *R. blanda*, from which it is distinguished by its habit of growth, its glaucousness, by one or two pairs more of leaflets, its prickly stem and by its being more or less glandular. It would therefore appear that the characters relied upon to differentiate it from the type lack specific distinctness.

Var. *Arkansana* ranges from Texas and New Mexico northward to British America and westward to the Rockies and probably beyond. It undergoes many modifications. On dry prairies it becomes markedly surculose; its rhizomes are transformed into in-ground stems which give off annual shoots like flowering branches. Since these rhizomes have no leaves, the demand for more foliage is met by an extra pair of leaflets on the suckers. In protected locations, as margins of woods and thickets, it attains a height of from three to five feet, with stem either smooth or prickly, and lives for years. It is sometimes found densely resinous. Like *R. blanda*, rudimentary glands on the sepals and stipules and under surfaces of the leaflets are rarely absent. When its flowers are solitary, as sometimes happens, the low prickly forms bear some resemblance to *Rosa acicularis*, from which it is readily distinguished by its glaucous stem and foliage, leaflets more numerous and of another shape.

4. *Rosa acicularis*, Lindley, 1820, ranges through the northern portions of Europe, Asia and North America. In the New World it extends from Alaska south to about 45° latitude; from the Pacific eastward to Michigan and James Bay. Its synonyms appear to be *R. acicularis*, var. *Bourgeauiana*, Crépin; *R. Sayi*,

*Synopsis of the Flora of Colorado, 1874.

Schwein., a resinous form, and *R. Engelmanni*, S. Watson, a form with oblong fruit.

After having carefully examined several European and Asiatic specimens of this species and a large number of American forms, including the original *R. Sayi* in the Phila. Academy, I cannot find any character of recognized value to separate them. The forms of the New World are usually somewhat more resinous but not constantly so, and the fruit probably more inclined to be globose. These variations are far from being uncommon in other species, as a result of differences in environment. To multiply species therefore, because one specimen has a few more hairs or a few less glands than another, or perchance fruit of a slightly different shape, seems uncalled for.

Rosa acicularis is from one to three feet high, more or less prickly, sometimes densely so; prickles rarely enlarged about nodes simulating geminate spines; leaflets 3 to 7, usually 5 to 7, broadly elliptical to oblong-lanceolate, mostly obtuse or slightly cordate at base, flowers solitary; fruit sometimes globose but usually more or less oblong.

5. *Rosa Nutkana*, Presl, 1857, ranges from western Montana, Idaho, Oregon and Washington northward and probably southward. In its densely resinous forms with stout recurved spines and broad stipules, it is not easily confounded with any other species. Forms, however, occur which are nearly or quite destitute of glands, with straight, slender, sometimes ascending spines, frequently absent or reduced to a single one in the upper part of the stem, leaflets larger and simply toothed, and which are difficult to separate from unarmed forms of *R. acicularis*. The fruit of *R. Nutkana*, large, coriaceous, thick-walled and fibrous, with seeds larger than in any other species, serves to distinguish it.

6. *Rosa pisocarpa*, Gray 1882 (? *R. Woodsii*, Lindley 1820). In "*Primitiæ*" p. 432, M. Crépin describes *R. Fendleri* from a specimen collected in New Mexico. This description is based on a stunted growth with straight slender spines, small leaflets and solitary flowers. He is now, however, inclined to regard it as being practically the same as *R. pisocarpa*, in which opinion I fully concur; but Dr. Sereno Watson considers them quite distinct.

Limited space prevents me from entering into details; I shall, therefore, merely state my conclusions.

As in *R. Nutkana*, and in fact, as in all the Eucinna momeæ, the spines, which are normally more or less curved, may become straight and slender and not infrequently ascending in the upper part of the bush; so in *R. pisocarpa*.

To divide specimens in two sections, one with straight or ascending spines, and the other with stout recurved spines, would indicate little experience in observing the variability of Roses. Moreover this treatment has been tried with *R. Nutkana* and wisely discontinued.

R. pisocarpa, in its varying forms is widely distributed, ranging from New Nexico to British America, possibly as far north as Alaska (Crepin). It affects low wet locations, attaining a height of 10 to 12 ft. in such, but is much reduced when growing in drier, less fertile ground. Fruit is usually small, ordinarily clustered, rarely solitary; seeds small, dull white; stipules short, usually narrow; leaflets rather small, oblong-ovate to-obovate, usually simply toothed; fascicles of adventitious branches are quite common in the upper part of the bush, especially when reclining.

R. Woodsii is closely related to *R. pisocarpa*. In fact many of the specimens found in herbaria and so labelled are of this species; others have a marked resemblance to *R. blanda*, var. *Arkansana*. As before stated, an occasional small lobe to the outer sepals has little diagnostic value. It may be here remarked that when two or more species grow together, especially if on the limits of each, intermediate forms are common, apparently due either to the influence of a common environment or to hybridization, or to both combined.

Rosa Californica, Cham. and Schlecht. 1827 is badly delimited. M. Crépin speaks of it as a "chaos veritable." The material placed in my hands has been so little, and that little so contradictory, that I have not reached any satisfactory conclusions respecting it. I suspect, however, that one or two good species will be found in the débris when it is thoroughly elaborated. It is quite possible that variations of known species may figure largely in this heterogeneous mass.

A flowering specimen in the herbarium of Lafayette College, collected by Prof. Rothrock at Santa Barbara, seems distinct, but whether it is Chamisso's Rose I cannot tell. It is the terminal portion of a bush, probably 3 ft. high, with stout recurved geminate spines (resembling those of *R. Canina*) without prickles; sepals entire; flowers solitary or corymbose, on short, densely pubescent pedicels; stipules pubescent, narrow, with diverging apices; fruiting receptacle ovate; leaflets 5 to 7, elliptical to oblong-obovate, broadly obtuse or truncate at the apex, tapering to the base, glabrate above, villose-pubescent beneath; serrations compound-glandular. This doubtless varies with spines nearly straight, stem taller and prickly, and with leaves, stipules and pedicels with varying degrees of pubescence and glandulosity.

8. Many roses take on a surculose habit, which would appear to be due to unfavorable conditions of growth or to severe cold. As we have seen, var. *Arkansana* is an example, as are also certain forms of *R. humilis* and *R. foliolosa*. *R. Californica* likewise seems so disposed. In Bot. Calif. 2, 444, Dr. Watson describes *R. spithamæa*. Subsequently, however, he regards it as a "dwarf form of the resinous variety." * Specimens of this, collected by Mr. Rattan along the Trinity River, and kindly loaned me by Dr. Watson, seem to warrant his conclusion. It is most probably a surculose form of some rose which grows stouter under more favorable conditions.

The same may be said of specimens collected by Prof. E. L. Greene in Petrified Forest, Sonoma County, and which differ in several respects from those collected by Mr. Rattan. It would seem probable that these are a surculose form of a closely related yet distinct*ive* species. The description here given is based on specimens in fruit, furnished by Drs. Porter and Britton. Stem 6 to 10 inches high, with stout prickles and long straight or slightly recurved geminate spines; leaflets 5, roundish-ovate, petiolulate, broad and markedly inequilateral at base, crenate-serrate, toothing obtuse, apiculate and serrulate; stipules short, broadest below the middle, apices diverging; flowers many in flat-topped corymbs; sepals short, oblong-lanceolate, pointed, erect and persistent on matured fruit; styles gradually enlarged upward, capitate; pedi-

*Proc. of the Am. Acad., Vol. 20, p. 344.

cels short, glandular-pubescent, as also sepals and fruit; fruit small, yellowish-brown, globose, densely clustered, hispid, pulp scanty, minutely tuberculate; seeds few, large, insertion basilo-parietal. This may be a good species or a surculose form of a good species.

White Mountain Willows—IV.

By M. S. Bebb.

Salyx argyrocarpa×phylicifolia, F. & B. nov. hyb. Year old twigs, stout, dark purple and pruinose; leaves much as in *argyrocarpa*, but twice the size, equally glaucous but less silky beneath, strongly rugose-veined, the margin revolute especially near the base and more coarsely undulate-crenate; fertile aments (the staminate plant has not been found) more as in *phylicifolia*, but shorter and more leafy bracted at the base, capsule more silvery-silky, pedicel scarcely longer, style equally produced, stigmas entire, of a beautiful purplish-red, while those of *phylicifolia* are yellow.

Mr. Faxon remarks of the plant as observed growing: "The hybrid is of about the same height as *phylicifolia*, and I have not yet found it except in Tuckerman's Ravine associated with this species and *argyrocarpa*. It is very distinct in habit, and easily distinguished from either at a distance of more than one hundred feet; from *phylicifolia* by its dull glaucous color and more upright branching; from *argyrocarpa* by its being so much taller. It grows in patches like *phylicifolia*, both frequently entirely surrounded by *argyrocarpa*, but I think the latter does not extend to so low a level as the hybrid, and the hybrid not so low as *phylicifolia*. The youngest leaves on the growing tips of the hybrid are of the same color as the older ones, whereas in *phylicifolia* the new shoots have leaves of a reddish or brownish hue. In fine, it seems like a larger *argyrocarpa* with aments of *phylicifolia*."

In looking over some old sheets of *S. phylicifolia* in Dr. Gray's herbarium, I came unexpectedly upon a single specimen of this hybrid—leaves only, very much discolored, very much poisoned and attached to a sheet of that thin, bluish paper which marks the earliest mounts of this herbarium. The label, in the handwriting of Mr. Carey, is very interesting. First comes "*S.*

phylicifolia, L.? Fries! Tuck!" then under this "*S. repens? forma matura glabra.*" Who can not imagine the writer's perplexity? The ink recording one determination is not dry before the alternative is written, and then, as if some decision must be reached, with a bold dash (such as only an old fashioned quill pen with a soft nib ever could make) the "*S. repens*," etc., is almost completely obliterated. Then follows "White Mts., 1842, A. Gr.!" Think of it! Not another spot in America has been so frequently explored by botanists as Tuckerman's Ravine, and yet here is a willow, conspicuous enough to be distinguished "at a distance of one hundred feet," collected by Dr. Gray half a century ago, and thenceforth completely neglected until Mr. Faxon entered the field with the purpose of investigating its willows.*

Salix herbacea, L. "This grows in small, rather dense patches, scattered over a large area about the Lake of the Clouds, between Mt. Washington and Mt. Monroe, and is especially abundant on the steep flowery slopes about the upper edge of the Great Gulf, Mt. Washington and on the Great Gulf side of Mt. Clay, usually intermingled with alpine grasses and other alpine plants. Altitude 5,000-5,800 feet above the sea." (Faxon).

It is noticeable that the *S. herbacea* of the White Mountains does not differ in the least from the plants of Greenland and Scandinavia. It occurs in the same form on Mt. Katahdin; on Mt. Albert, Lower Canada; at the sea level on the coast of Labrador; shores west of Davis Strait; Greenland, and on all the islands across the North Atlantic to Northern and Arctic Europe—everywhere the same little *S. herbacea*. Shall we then regard the White Mountain colony, the outermost station for the species in North America, as having, through this fixity of the specific type, survived unchanged since the close of the glacial epoch? Or is it not much more probable that it owes its origin to wind-carried seeds, and that subsequent and frequent dispersals

*Anderson has written on the sheet "*S. pedicellaris?*" Here then we have the specimen referred to in DC. Prod. 16.2, 234, as indicating the probability of a hybrid between *S. argyrocarpa* and *S. pedicellaris*; but as *S. pedicellaris* does not grow in the alpine region of the White Mountains, such a cross could not occur spontaneously. Why was not the broad hint given by Carey's ticket accepted as a clue to the probable parentage of a supposed hybrid?

from the area of common distribution northward have helped to keep down any modifications which might otherwise have appeared after long continued and perfect isolation under changed conditions? Mr. Walter Deane gives me the following pertinent quotation from a "Notice of Flowering Plants and Ferns collected on both sides of Davis Strait and Baffin's Bay," read by Mr. James Taylor before the Botanical Society of Edinburgh.* "*S. herbacea*, coast to snow line, covers extensive tracts, and that too where most other plants cease to appear, except *Juncí* and *Luzulæ*. *In dry fine weather I have often seen its downy seeds wafted in clouds over land and sea.*" These downy seeds might be transported a very great distance by a strong upper-current of wind, and the alpine summit of a high mountain, with its surface constantly moist and dripping from melting snow-drifts, would present all the conditions favorable for their germination. After this, the gaining and maintaining of a permanent foothold would depend upon climatic influences, to which *S. herbacea* seems peculiarly sensitive. It is not found on the Rocky Mountains, where four at least, of the species with which it is associated in Greenland are widely distributed, though in strongly modified forms. It is noticeably present on all the Arctic shores of the North Atlantic, both American and European; and just as noticeably absent from all the shores of the North Pacific, both American and Asiatic. It does not vary to meet varying conditions, but thrives where these are favorable, and does not grow at all where they are unfavorable.

Notes upon Zygodesmus and its New Species.

The genus *Zygodesmus* is something of a puzzle to the student of systematic fungology, and therefore does not lack in interesting points of structure. Of the twenty-seven species enumerated by Saccardo,* sixteen are known to be North American. None of these infest growing tissues, and a large percentage, fully twenty out of the twenty-seven, are found upon dead wood or bark. It is interesting, therefore, to note that a new species was found early last summer near New Brunswick, N. J., upon the flower-bearing stems of *Pyrola rotundifolia*, namely *Zygodes-*

*Trans. Vol. 7, 1862.

mus Pyrolæ, Ell. and Hals. The color of the hyphæ of this species is a distinct cinnamon, and forms a thick felt-like covering upon the stem, beginning at the surface of the ground and extending up for about two inches. The whole genus may be considered as a chromatic one, for nearly all colors are represented, as the following names of some of the species will indicate: *Z. fuscus*, *Z. atro-ruber*, *Z. violaceo-fuscus*, *Z. rubiginosus*, *Z. ferrugineus*, *Z. olivascens*, *Z. ochraceus*, there being two species of the latter in Saccardo!

Within the past month another species has been found, and this one has all the characteristics of a genuine parasite, which was not so evident in the *Pyrola* species. While inspecting a bed of cultivated violets under glass for the leaf spot fungus (*Cercospora Violæ*, Sacc.), *Botrytis* and other fungi, it was a surprise to find several leaves upon a few plants in a group covered with a chalky white coat, reminding one somewhat of the Erysipheæ, but without the powdery appearance. A microscopic examination of the infested parts of the leaves showed that the characteristic threads of the *Zygodesmus*, easily recognized by the excessive branching and lateral union of adjoining cells in the hyphæ, were all through the tissue of the host, and had caused the affected parts to lose their green color. A thick mat of hyphæ had formed upon the surface, and threads could be traced from this through the breathing pores to the ramifications within. Upon leaves long infested the tissue becomes dry and contracted, and a cream color replaces the almost pure white. That the species is not confined to the violet is demonstrated by finding a few sprays of parsley growing in the vicinity of the attacked violets, afflicted by the same *Zygodesmus* and whitened almost as if sprayed with a lime-wash.

Besides adding a well established parasite to the genus which is generally held as saprophytic, the violet specimens reach another step in the chromatic scale, and naturally the species has been named *Z. albidus*, Ell. & Hals. and will probably be distributed in the Ellis North American Fungi.

BYRON D. HALSTED.

RUTGERS COLLEGE, April 18, 1890.

*Sylloge Fungorum, Vol. iv. pp. 283–288.

Grasses in the Wrong Genus Cover.

By W. J. Beal.

In the Bulletin, page 11, 1888, are described some new species of grasses, among them *Poa macrantha*, Vasey, and *Poa argentea*, T. Howell. I believe these belong to the genus *Melica*.

Melica argentea (Howell). An erect, loosely-tufted perennial, 15-20 cm. high. Radical leaves numerous, curved, conduplicate, 3-7 cm. long, in cross section oblong, 0.6-0.8 mm. diameter, bulliform cells wanting, apex obtuse, sheaths loose, membranous, ligule 2-3 mm. long, blades of the culm 2, conduplicate, 11-nerved, 1.5 cm. long by 1.3 mm. diameter, ligule acute 3-5 mm. long. Panicle oblong, spike-like, 2-3 cm. long. Spikelets oblong-linear, 6-8 mm. long, 3-5 flowered, joint of rachilla 1.7-2 mm. long. All the glumes brownish shining, with broad scarious margins. Empty glumes subequal, 3-4-5-nerved, obovate, ovate, variously lobed, toothed or entire, 3.5-5 mm. long; floral glume oval or obovate when spread, denticulate, 5-6-7-nerved, minutely scabrid or smooth, 5.5 mm. long, palea lanceolate, about the length of its glume, scabrous on the keels, anthers 3, 2.5 mm. long.

The following, among other things, indicate that this is a species of *Melica:* the soft, smooth or scarious obovate or irregularly toothed glumes, empty glumes often 4-5-nerved, the long spongy joints of the rachilla, the floral glume without hair at the base, often 6-7 nerved, the nerves evanescent, not connivent above.

Plants from T. Howell ticketed *Poa argentea*, Howell, collected in Siskiyou Mountains, Oregon, July 18, 1887; also from U. S. Agr. Dept. ticketed *Poa macrantha*, Vasey, collected on sea coast, Oregon, by Thomas Howell.

Melica macrantha, (Vasey).—A smooth stout perennial 3–4 dm. high, ascending from creeping rootstocks. Leaves of the culm, excepting 2–3 of the upper ones, bear in their axils non-flowering leafy branches. Leaves of these branches conduplicate, curved and flexuose, often extending to the panicle, the extreme apex obtuse or abruptly pointed, in cross-section oval or

circular, 5–10 mm. in diameter, a set of small bulliform cells on each side and near the mid-nerve; those of the culm a little wider, the upper one 1–5 cm. long, sheaths compressed, loose, ligule 1–2 mm. long. Panicle erect, dense, sometimes interrupted below, 4–10 cm. long, rays in twos and threes, stout, erect, the longest 3–5 cm. long. *Staminate* spikelets compressed, ovate-lanceolate or oval, 4–7 flowered, 10–15 mm. long, light green or yellowish; joint of rachilla large, soft, sparingly pubescent, 1.5–2 mm. long. Empty glumes oblong-lanceolate, soft-scabrid, 1st 3–4–5 nerved, 7–10 mm. long, 2d 3–7 nerved, 8–11 mm. long; floral glume oval, or oval-lanceolate, with soft hairs at the base and lower part of the keel; apex notched, awnless, 3–10 nerved (even on glumes from the same panicle), 8–10 mm. long, palea but very little shorter than its glume, linear, ciliate on the keels, apex notched; anthers 5 mm. long. *Pistillate* spikelets have joints of the rachilla shorter, empty glumes and floral glume a little shorter.

The compressed spikelets and conduplicate leaves point to affinities with *Poa;* the following show affinities with *Melica:* large, soft-scabrid, light green or yellowish spikelets, glumes oval, floral glume notched at the apex, not keeled, rachilla large, long and soft, empty glumes usually more than 3 nerved and floral glume often more than 5–7 nerved.

Poa macrantha, Vasey.—Specimens from T. Howell, sand dunes Tilamook Bay, Oregon; also from Dr. G. Vasey.

A Notable Collection of Botanists.

It will doubtless be of interest to botanists to know that in the Wolff collection of engravings, recently presented to the Syracuse University, many portraits of botanists are included. Of the 12,000 portraits of distinguished men of all times and from all lands included in this collection, some 6,000 have been catalogued. From this catalogue we note the names of the following botanists:*

ADANSON, Aiton, Barrelier, CASPAR BAUHIN (6), *Hieron.*

* Names in small caps are represented in the collection in folio size; those in italics in quarto; those in Roman type are mostly in octavo, but a few are duodecimo. A number after the name indicates the number of different portraits of the man.

Bauhin, Billardiere, BLUME, BONPLAND, Bory de St. Vincent, AL. BRAUN, R. BROWN (2), BRÜCKMANN, OTTO BRUNFELS, Camerarius, Celsius, *Cesalpino*, *Clusius*, Collinson, W. CURTIS, ERASMUS DARWIN (7), CHARLES DARWIN, DESFONTAINES, Dillenius, Dioscorides, *Dodart*, Dodonæus, Doornik, EHRENBERG, ENDLICHER, Escher, FAGON, FEE, FISCHER VON WALDHEIM (4), FORSTER, J. C. FREMONT, FUCHS, GERARDE (2), GESNER (7), J. G. GMELIN (3) J. F. Gmelin (2), GÖPPERT, J. E. GRAY, GUALTER, *Hedwig*, HEER, Heucher, JOHN HILL (7), *G. F. Hoffman* (2), M. HOFFMAN, W. J. Hooker, J. Hope, Hoppe, Hornschuch, Hosack, HUMBOLDT (15), JACQUIN (4), Janichius, JAQUIN, JEPPE, JUNG, Jungerman (2), *B. Jussieu*, A. L. de Jussieu, *Kniphof*, Kramer, KUNTH, Langdorff, James Lee, LINDLEY, LINK, LINNÆUS (27), L'OBEL, J. H. LOCHNER, M. F. LOCHNER, LUDOLF (2), LUDWIG (2), Lüder, MAPPUS, Martinet (5), MARTINS (2), MATTHIOLI (6), J. C. A. Mayer, T. Mayer (2), *Mentzel* (2), MERCATUS, C. von Mertens, F. C. MERTENS, MIKAN, P. Müller, *Nævius* (5), N. J. DE NECKER (2), NEES VON ESENBECK, Neuhauser, Nicolai, Œder, J. PARKINSON (3), PELLER, Plunkenett, POHL, RAY (8). REINWARDT, RETZIUS, REVEILLIERE-LEPAUX, Rhyne, RIOLANUS, RIVINUS, ROSA, RUDBECK, RUYSCH, SCHÄFFER (10), *Schenck*, Schkuhr, SCHLEIDEN, *Schrader*, SCHRANK, Schrœtter, SLEVOGT, J. E. SMITH, *Sowerby*, Sprengel (6), Swartz (2), SWEERTINS, Tabernæmontanus, Tandler, THEMMEN, Thunberg (6), Tournefort (2), Tragus (Bock), TREVIRANUS (2), TREW, Vahl, VAILLANT (3), VATER, VROLICH, WALLICH, *Wallroth*, WANGENHEIM (2), WEBER, Wichura, WILLDENOW (6), J. B. WINSLOW, ZANNICHELLI, *Zimmermann*, ZUCCAGNIO—Total, 144 names.

It will be noted that the pre-Linnæan botanists are especially well represented. Many of the portraits are fine steel engravings, and from this every style of engraving is represented, down to lithographs, and in a few cases wood engravings. The 27 portraits of Linnæus include three folios and numerous quartos, octavos and duodecimos.

LUCIEN M. UNDERWOOD.

Review of Foreign Literature.

Die Gattungen der Pomaceen. Emil Koehne. (Wissenschaftliche Beilage zum Programm des Falk-Realgymnasium zu Berlin, Ostern, 1890, 4to, pp. 33, 2 plates.)

This is a recast of the genera of the suborder Pomaceæ, with a review of the work accomplished by earlier writers on the group, notably Decaisne, Lindley, Th. Wenzig and Focke. The author recognizes twenty-three genera, as against the nine of Bentham and Hooker, and most of the additional fourteen appear to us based on a minimum of characters Of especial interest to American botanists we note that two new species of *Amelanchier* are described—*A. Utahensis*, based on Marcus E. Jones' No. 1716, which was distributed (erroneously the author says) as *A. alnifolia*, var., and which it appears to be, and *A. Pringlei*, based on Pringle's No. 259 from the Santa Eulalia Mts., Chihuahua, distributed as *Cotoneaster denticulata.* N. L. B.

Botanical Notes.

Additions to Illinois Flora. The following species found in the vicinity of Peoria, Ill. are not in Patterson's Catalogue of Illinois plants:

Scleria verticillata, Muhl. Found in a cold peat bog in the Illinois river bottom in Woodford Co., two miles distant from Peoria. When first noticed in the summer of 1887 it was frequent at this station, but in 1888 the bog was brought under cultivation, and since, though persistently searched for, has not been met with again. I believe this station to be farther west than any previously reported.

Bromus mollis, L. Noticed the past summer in Tazenell Co., on the grades of the Toledo, Peoria and Warsaw R. R. As this road is an eastern one it is to be inferred that the species is an immigrant from the east.

Œnothera sinuata, L. The past season I found a diminutive species of *Œnothera* on the brow of the bluffs bordering Seventh Ave. and separating the upper and lower city. It covered a space of haif an acre and was abundant. I determined it as *Œ. sinuata*, and this was verified by Walter Deane, of Cambridge, Mass., who compared flowering and fruiting specimens I sent him, with spec-

imens in Harvard herbarium. This locality would seem to be out of the usual range of the species.

FRANK E. MCDONALD.

Breweria humistrata and B. aquatica. I have some specimens of Breweria from Grand Prairie, Arkansas, that combine the characters of the above species. They have the mucronate leaves and 1-7 flowered peduncles of the former, and the hairy calyx, short leaves (1′ long) and glabrous filiments of the latter. Our specimens were collected in moist ground at DuVall's Bluffs. With these intermediate specimens before me I am inclined to think that the above species are only upland and lowland forms of the same thing. We believe *Breweria* has not been before reported from Arkansas.

F. L. HARVEY.

Stellaria pubera. This plant is not very common in sonthern or middle Georgia; at least I have never found it except in one place; a wooded hillside near the city. There, in connection with the ordinary form having petals so deeply cleft that their narrow, spreading lobes appear like separate petals, occurs a variety that differs conspicuously in the shape of the organs. The petals are cleft not more than half their length, with the lobes convergent, the two forms presenting on a larger scale much the same difference in appearance that one observes between the corollas of *Stellaria media* and *Cerastium vulgatum.* Examination, however, revealed no specific difference between the two forms, the variation confining itself entirely to the shape of the petals. The two forms grow together side by side, under the same conditions, the typical form, with the deeply cleft petals, being the more abundant. Both bloom at the same time—March, and the early part of April.

MISS E. F. ANDREWS,
Wesleyan College, Macon, Ga.

Hybrid Grimmias. J. Cardot (Rev. Bryol. xvii. 18-19.) A form intermediate between *G. leucophæa* and *G. crinata* is reported from the mountains of Auvergne. We have also recently received from M. Philibert his "Observations sur L'Hybridation dans les

Mousses," and specimens intermediate between *G. orbicularis* and *G. tergestina*. E. G. B.

A hybrid Desmid. In Vol. iv, p. 171, of the Annals of Botany, Mr. A. W. Bennett describes and figures a desmid supposed to be a hybrid between *Euastrum crassum*, Ktg. and *E. humerosum*, Ralfs. It was collected on Dartmoor last August, and is stated to be the first recorded instance of hybridism among the desmids.

Index to Recent American Botanical Literature.

Alabama.—Vegetation in Southern. Carl Mohr. (Garden & Forest, iii. 212).

An account of the effect of a cold wave upon the vegetation during last March.

Algæ of the Plains.—The Fresh-water. H. J. Webber. (Am. Nat. xxiii. 1011-1013).

A list of the smaller algæ collected in a single day's trip in the Sand Hill region of Nebraska.

Alghe della Terra del Fuego raccolte del Prof. Spegazzini. F. Ardissone. (Rendiconti Reale Instit. Lombardo (II) xxi. 208-215).

A list of 45 species; *Cladophora Magellanica, Callithamnion spinuliferum* and *Ceramium radicans* are described as new.

Analogies and Affinities.—III. Edward L. Greene (Pittonia, ii. 51-57, May 1, 1890).

This paper is a discussion of the relationships of *Allium* to other Liliaceous genera. It is shown that *Triteleia uniflora*, Lindl., a Chilian plant, is referable to the genus *Leucocoryne*, and that the species of *Androstephium* have a strong onion-like odor. *Milla cærulea*, Scheele, becomes *Androstephim cæruleum*. *Allium unifolium* var. *lacteum*, is described as new, from San Luis Obispo Co., Cal.

Aristolochia Goldeana. (Gard. Chron. vii. 525, fig. 83).

Botanical Laboratory.—A New. D. P. Penhallow. (Can. Rec. Sci. iv. 89-93, illustrated).

A description of the laboratory at McGill University.

Botanical Terminology.—Three Suggestions on. Conway McMillan. (Am. Nat. xxiv. 366-369).

Buckleya distichophylla. C. S. Sargent. (Garden & Forest, iii. 236, fig. 37).

California Cañon.—In a. C. H. Shinn. (Garden & Forest, iii. 211-212).

An account of the vegetation in Morrison Canoñ.

California.—Native Shrubs of.—III. E. L. Greene. (Garden & Forest, iii. 198, 199).

Notes are given upon *Garrya elliptica* and *Ribes tenuiflorum.* In regard to the latter species, the author says that it has generally been confused with *R. aureum*, from which it is, however, distinct, the flowers being entirely scentless and its berries large, cherry red and without aroma.

Californian Plants.—New. J. G. Lemmon. (Pittonia., ii. 67-69).

Prunus subcordata, var. *Kelloggii; Arctostaphylos Parryana*, and *Allium obtusum*, all from California.

Catalogue of Plants Found in New Jersey. N. L. Britton, Ph.D., with the Assistance of the Botanists of the State and Contiguous Territory, and of Specialists in the Several Departments of the Science. (Final Report of the State Geologist, ii. pp. 25-642. Reprinted. Dated 1889. Issued May, 1890).

Of this work we can say, as did Enæas of the battle of Troy, "all of which I saw and a part of which I was." Since the distribution of the interleaved copies of the Preliminary Catalogue of the Flora of New Jersey, nearly a decade since, this work has occupied the attention of perhaps a larger number of careful observers than have ever given their special attention to any similar local study. The author's introduction does not contain a list of these co-laborers, for the probable reason that it would have included the name of almost every working botanist in and about the State of New Jersey. More than one man has trodden his first steps in the paths of systematic botany since the appearance of the Preliminary Catalogue, and has progressed until able to contribute his mite to the finished work; and upon the other hand, the book is enriched by the mature studies of such men as Porter, Martindale, Redfield and Canby. But these contributions alone could never have given us such a work as lies before us. It is much more than a mere compilation of the observations fur-

nished by its contributors. Each individual record has been searched and verified previous to acceptation, and we imagine that there are but few of the contributors who have not been set right at least once! The rigidity with which specimens have been demanded in confirmation of notes has not always tended to the convenience of collectors, but it has excluded not a few errors from the result. Those who have become acquainted with this element of the author's work, and who have had opportunities for observing the careful scrutiny which has attended each detail, will not fail to repose great confidence in the accuracy of the observations which have been admitted to record.

Nor is this all. The author has not even contented himself with accepting the classifications—much less the names—of the works commonly recognized as authoritative, but has made exhaustive special studies, and incidentally contributed such important revisions as those of *Tissa*, *Hicoria*, *Lechea*, *Eleocharis* and *Cyperus*. And from all this has resulted a work which does not deserve to rank with the ordinary local plant catalogues. It constitutes the most important embodiment yet published, of principles which are receiving the attentive consideration by the present generation of botanists. Few of us will need to examine its pages to learn what rules of authority and citation have been followed; but there are also few of us who will not be surprised upon more than one occasion as we use the book, to note the necessities which have arisen for the correction of long accepted errors. It will take us some time to become accustomed to all the names, but we are happy in believing that very few will be ungracious enough to decline to profit by the results of ten years of such faithful labor as Dr. Britton has generously bestowed upon his task. To these authentic names are appended, in parentheses, those which are superseded, and the latter also appear in italics in the index.

The author's ideas concerning the use of the term "forma," set forth in the last number of the BULLETIN, will perhaps meet with some disfavor, but the question can hardly extend to the advisability of discriminating between forms and varieties, but only to the application of formal names. That the careful discrimination between these two classes of variations is a work that

has been too long delayed must be admitted, we think, by all.

In the introduction to the work we meet with a severe disappointment. It comprises only six pages, while at least sixteen might with the greatest profit have been devoted to it. We can readily understand how fifteen years of daily acquaintance with the representatives of the different sections of the State flora might tend to make any remarks thereupon appear trite to the mind of the learned author. But the less well-informed public would have profited by some extended discussion of the characteristics of those sections—illustrations of the classification which is barely mentioned in outline. Our trap-rock flora and that of the limestone regions to the northward; the relations of the pine barren plants to those of the adjacent region; the peculiarities of our salt marsh vegetation, and those interesting plants which are mentioned as having crept into our western borders: all these would have furnished most interesting and instructive matter to thousands of readers and students who know little or nothing of them. As it is we are informed with great brevity that "our flora may thus be divided with considerable accuracy into a northern and a southern, whose present distribution has been determined by differences of soil and climate," and "the conclusion reached at the time the Preliminary Catalogue was written, that they are most naturally separated by the glacial terminal moraine, appears to be substantiated. * * * Besides these two main divisions of our flora, there is another, which may be termed the marine and coast group of plants, species and varieties especially characteristic of the sea beaches and salt or brackish marshes and meadows. Some of these are plainly forms of upland origin, which have accommodated themselves to their saline surroundings, and been thereby slightly changed in structure and appearance, so as now to be evidently distinct from their inland neighbors and relatives, while others appear to be very distinct from any other living forms. * * * This division of the flora is very uniform in character from one end of the coast line to the other, and is the most distinct and differentiated of all.

"We may also make out a fourth group of species of especial western distribution, there being a few plants mainly confined to the Delaware River valley, and reaching their greatest devel-

opment in point of abundance to the west. These species have no special significance in the consideration of the origin of our flora, and might, perhaps, all be included in one or the other of the two divisions first considered."

The herbarium illustrating the work has become State property and comprises "over five thousand mounted sheets, bearing ten thousand or twelve thousand specimens."

The list of the Anthophyta (Phanerogams) occupies two hundred and seventy pages and comprises 1,919 species and varieties, 13 being Gymnosperms, 1,348 Dicotyledons, and 558 Monocotyledons. The Gymnosperms stand next preceding, in order, to the Pteridophyta. The largest natural orders of the Anthophyta are, Compositæ with 223 species, varieties and forms, Cyperaceæ 182, Gramineæ 164, Leguminosæ 76, Rosaceæ 73, Labiatæ 66 and Scrophularineæ 48. Orchideæ and Lilaceæ have each 45 representatives. Of true ferns there are 47, and of other Pteridophyta—including Ophioglossaceæ—29. Of Bryophyta there are 461. Of these the Sphagna, elaborated by Mr. E. A. Rau, number 42; the Musci, by Mr. Rau and Mrs. Britton, on the basis of the list in the Preliminary Flora by Mr. C. F. Parker, 312; the Hepaticæ by Mr. Rau, on the same basis, 96, and the Characeæ by Dr. T. F. Allen, 17. There are 3,021 Thallophyta distributed as follows: 329 lichens, from MS. by C. F. Austin, revised by Dr. J. W. Eckfeldt; 987 Algæ, the marine by Mr. Isaac C. Martindale and the fresh-water by the Rev. Francis Wolle, combined by the author into a single series, and the Fungi, by Mr. J. B. Ellis and Mr. W. R. Gerard, to the number of 1,705. The fresh-water and marine forms of the Protophyta are, like the Algæ, divided between Messrs. Wolle and Martindale and number 164, namely, Cyanophyceæ 111, Chlorophylleæ 34, Achlorophylleæ 19.

The total number of species, varieties and forms of the entire catalogue is therefore 5,641, and elaborate tables are appended showing their distribution among the different groups. There is an ample list of abbreviations and a thoroughly perfect index, the synonyms being in italics.

The following statement, which appears on page 29, will be heartily endorsed by every one: "I have been fortunate in se-

curing the cordial co-operation of students of all kinds of plants, and the results of their investigations have caused the present work to become the most complete enumeration of plants of any region of as great area in the world. In fact, no such systematic study of a flora has been hitherto attempted." H. H. R.

Check List of Plants, Compiled for the Vicinity of Baltimore. Basil Sellers. (Pamph. 12 mo. pp. 72, Baltimore, 1888).

An enumeration of 1,609 species and varieties of Anthophyta and Pteridophyta reported from and collected within an area twenty-five miles square, having the City Hall of Baltimore for its center. It is certainly an excellent showing for such a limited area, and we trust that the good work will be continued and arranged according to modern botanical ideas. The following closing words of the preface lead us to hope that this will be done: "Gray's Manual has been followed as closely as possible, and changes in arrangement and nomenclature, as well as notes, etc:, have been reserved for the future."

Chrysobalanaceen.—Beiträge zur Kenntniss der.—II. Karl Fritsch. (Ann. K. K. Naturhist. Hof. Museum, v. 9-14).

New species from Brazil and Guiana are described in the genera *Hirtella*, *Couepia* and *Parinarium*.

Daisy.—The European. F. H. Vaslit. (Zoe, i. 48).

The fact is noted that *Bellis perennis* has become thoroughly established in one of the glens of Tamalpais, where it has lost its "double" characteristic, under which it is so commonly known in cultivation here, and has reverted to its normal form.

Day Lily of the Desert.—The. C. R. Orcutt. (Pacif. Rural Press, April 12, 1890).

A description of *Hesperocallis undulata*.

Dendromecon.—Deformed Flowers of. T. S. Brandagee. (Zoe, i. 46-48, Pl. i.)

Teratological notes on *Dendromecon rigidum*.

Echniocactus.—Some Notes on. C. R. Orcutt. (Garden and Forest, iii. 238).

Flora of the Kurile Islands. K. Miyabe. (Mem. Bost. Soc. Nat. Hist., iv. 203-275. Plate XXII).

The Kurile Islands extend in a nearly straight line from the Island of Yezo, Japan, to Kamtschatka, separating the Okhotsk

Sea from the Pacific Ocean. There are twenty-four larger islands and numerous smaller ones. They belong to the Empire of Japan. Mr. Miyabe enumerates 317 species, the largest orders being Compositæ with 30, Rosaceæ with 23, Gramineæ with 17, Ericaceæ with 16, Caryophylleæ and Liliaceæ each with 15. About 30 per cent. of the Kurile Flora is circumboreal in distribution; of the remainder 50 per cent. is purely Asiatic, and 10 per cent. American. Two species are supposed to be endemic—*Draba hirsuta*, Turcz. and *Oxytropis pumilis*, Ledeb. A new variety of *Prunus apetala* is described. Following Dr. Maximowicz, *Rubus strigosus*, Michx. is referred to a variety of *R. Idæus*, L. The paper is a very valuable contribution to the literature of geographical botany. N. L. B.

Flora Ottawaensis. J. Fletcher. (Ottawa Nat., May, 1890).

This part (pages 74-77) enumerates the species between *Dirca* and *Alnus*.

Flowers and Insects—IV. Chas. Robertson. (Brot. Gaz. xv. 79-84).

Notes upon the insects visiting *Baptisia leucantha, Psoralea Onobrychis, Amorpha canescens, Petalostemon violaceus, Tephrosia Virginiana*, and *Desmodium sp.*, are given.

Fungi.—The Nomenclature of. H. W. Harkness. (Zoe, i. 49-50).

Geo. W. Clinton.—An Address Commemorative of. David F. Day. (Pamph. 8vo. pp. 29, Buffalo, N. Y., 1890).

This address was delivered before the Buffalo Historical Society, Mch. 24, 1890. In it may be found many memoranda of the important part which Judge Clinton took in the development of the botany of the State.

Glandular Pubescence in Aster patens. A. S. Hitchcock. (Bot. Gaz. xv. 97, 98, illustrated; also reprinted).

History of Garden Vegetables.—The. E. L. Sturtevant. (Am. Nat. xxiv. 313-332).

Cabbage, (*Brassica sp.*), Pot Marigold, (*Calendula officinalis*), Potato, (*Solanum tuberosum*), Purslane, (*Portulaca oleracea*), Quinoa, (*Chenopodium quinoa*), Radish, (*Raphanus*), Rampion, (*Campanula rapunculus*), Rhubarb, (*Rheum* sp.) and Rocambole, (*Allium scrodoprasum*), are described.

Honeysuckles.—Two American. C. S. S. (Garden and Forest, iii. 187, figs. 33, 34).

Critical notes upon and figures of *Lonicera flava* and *L. Sullivantii.*

Hypnum circinale, Hook. J. Cardot. (Rev. Bryol. xvii. 17, 18).

The author finds that all his specimens are dicœcious, and believes *H. Sequoieti,* Muell. not sufficiently distinct to be a species.

Laboulbeniaceæ.—On Some North American Species of. Roland Thaxter. (Proc. Am. Acad. Arts and Sci., 1890, 5-14).

This is a preliminary communication on another group of entomogenous fungi, which, with the one already published by the author on the American Entomophthoreæ, is designed to form a monograph. In this number *Peyritschiella* and *Cantharomyces* are described as new genera with three new species, and *Stigmatomyces* and *Laboulbenia* add five more. E. G. B.

Mangroves. J. T. Rothrock. (Forest Leaves, iii. 5, 6, illustrated).

Contains representations of *Rhizophora mangle* and *Avicennia nitida.*

Mosses.—An Introduction to the Study of. Elizabeth G. Britton. (Microscope, x. 38-45; also reprinted).

Mycologic Observations—I. A. P. Morgan. (Bot. Gaz. xv.84-86).

Memoranda taken in January of this year, at Preston, Ohio.

Naturalized Plants of Southern California.—Notes on the.—II. S. B. Parish. (Zoe. i. 56-59).

Nomenclature.—A Question of.—Notes on North American Trees. —XVI. C. S. Sargent. (Garden and Forest, iii. 186).

The question is in regard to the proper binomial with which to designate *Schinus Fagara* of the "Species Plantarum," afterwards changed by Linnæus to *Fagara Pterota* when he determined that it could not stand in the former genus. The author calls attention to the fact that it may be included in the genus *Xanthoxylum,* and hence proposes to pass over the several names by which it has been called from time to time, and hereafter know it under the title *Xanthoxylum Fagara* (L.) Sargent. The fact is pointed out that this specific name was applied by Linnæus

under a misunderstanding, which, however, the author (and we entirely agree with him) does not consider, apparently, to have any bearing on the question.

Notes on American Plants. F. H. Horsford. (Garden and Forest, iii. 240).

Notes from Southwick, Mass., upon *Stylophorum diphyllum*, *Cardamine rhomboidea*, var. *purpurea*; *Trillium erectum*, var. *album*, *Heuchera Americana*, and *Jeffersonia diphylla*.

Pampas Grass.—The. Mrs. S. La Mance. (Vick's Monthly Mag., xiii. 146, 147, illustrated).

An account and representation of *Gynerium argenteum*.

Parry.—The Late Dr. C. C. J. G. Lemmon. (Pacific Rural Press, April 12th, 1890; illustrated).

A biographical notice with portrait.

Passiflora Miersii. (Bot. Mag. Tab. 7115).

Perityle.—A New. T. S. Brandagee. (Zoe, i. 54).

P. cuneata, from near Todos Santos, Baja California, is described as new.

Potato.—The Puruvian or American. (Garden and Forest, iii. 199, 200).

An account of the early history of the potato.

Prepusa Hookeriana. (Gard. Chron. vii. 320, f. 62).

Ranunculi.—On Some North American. Edward L. Greene. (Pittonia ii. 58-65, May 1, 1890).

R. rugulosus is a new species from California; *R. subsagittatus* is the *R. Arizonicus* var. *subsagittatus*, Gray, of Arizona, and it certainly appears distinct enough to be a species. *R. repens* has recently been found in Humboldt County, Cal. *R. obtusiusculus*, Raf. (1808) is shown to be the true name for *R. ambigens*, Wats.; *R. ovalis*, Raf. should replace *R. rhomboideus*, Goldie; *R. lacustris*, Beck and Tracy antedates *R. Purshii*, Richards. and must be adopted for the plant called in recent books *R. multifidus*, Pursh, there being an earlier *R. multifidus* of Forskall. *R. limosus*, Nutt. is claimed to be specifically distinct from this last, and a hybrid betweeen it and *R. sceleratus*, from Idaho, is described. It is important to ascertain definitely

just what relation the var. *terrestris*, Gray, bears to *R. lacustris*, and we would recommend its observation to botanists of Michigan and Minnesota, where it appears to be frequent. Professor Greene has rendered valuable service in this close study of perplexing forms, which really must be studied in the field to be intelligently understood. N. L. B.

Schizonotus and Solanoa. Edward L. Greene. (Pittonia ii. 65-67).

Solanoa is proposed for *Schizonotus*, Gray, (1876) there being already a genus *Schizonotus* of Lindley, (1830), and one of Rafinesque (1838). Professor Greene believes that Lindley's genus is to be maintained.

Soja. H. H. Rusby. (Reprint from Drug. Bull., April, 1890; illustrated).

Under this name is given a description and plate of *Glycine Soja* (L.), Sieb and Zucc.

Species.—New or Noteworthy. Edward L. Greene. (Pittonia, ii. 69-81, May 1-15, 1890).

The following are new: *Sisyrinchium demissum; Calochortus Plummeræ; Calochortus invenustus; Calochortus excavatus; Calochortus amœnus; Dodecatheon pauciflorum* (*D. Meadia* var. *pauciflorum*, Durand); *Dodecatheon Cusickii; Dodecatheon crenatum; D. Hendersoni*, var. *cruciatum* (*D. cruciatum*, Greene); *Polemonium occidentale; Troximon purpureum* (*T. aurantiacum* var. *purpureum*, Gray); *Troximon Arizonicum; Troximon plebeium; Downingia tricolor; Downingia ornatissima; Downingia insignis* and *Howellia limosa.*

Taxodium distichum.—The Knees of. R. H. Lamborn. (Am. Nat. xxiv. 333-340; illustrated).

To those who have followed the recent discussions in regard to the subject, this article will contain but little that is new, even the illustrations having previously appeared in Garden and Forest.

Uredospores of Gymnosporangium.—The So-called. C. E. Bessey. (Am. Nat. xxiv. 369, 370).

Willow.—A Monœcious. C. L. Anderson. (Zoe, i. 41, 42).

The author describes what he considers to be a monœcious hybrid between *Salix Babylonica* and *S. lasiandra.*

Proceedings of the Club.

The regular meeting was held on Tuesday evening, May 14th, the President in the chair and 44 persons present.

The report of the committee appointed to consider the proposed increase in size of the BULLETIN, reported in favor of increasing the subscription price of that journal to $2.00 per annum. The report was unanimously accepted.

Reports were made on the field days held at South Amboy, Carlton Hill and New Dorp.

Dr. Britton exhibited the growing tip of the rootstock of *Nymphæa advena*, and remarked on the endogenous structure of these plants. Mr. Hogg showed the red-bracted form of *Cornus florida*, and a large number of specimens of Japanese shrubs, including the curious *Cercidiphyllum*, first introduced into America by himself and supposed to belong to the Magnoliaceæ. Miss Steele showed the albino form of *Viola canina*, var. *Muhlenbergii*, from Meadville, Penn.

The paper announced for the evening then followed: "The Life-History of the Palm Family," by Dr. Newberry, illustrated by specimens of recent and fossil palms and by lantern slides.

The second May meeting was held on Wednesday evening, May 28th, at Columbia College, the President in the chair and 17 persons present.

Judge Chas. P. Daly, Mr. H. Ries, Mr. W. Holmes, Miss Whitman, Mrs. Percival Knauth, Miss E. T. Andrews, and Miss Fannie C. Neale were elected active members.

Mr. J. B. Leiberg was elected a corresponding member.

The field committee reported finding *Conopholis Americana* at Franklin, N. J., May 17th, and *Pogonia verticillata* at Forbel's Landing, L. I., on May 24th. This latter find is a re-discovery of the plant in an old locality.

Mr. Lighthipe read the announced paper of the evening upon "Plants gathered in Florida, January and February, 1890," illustrated by herbarium specimens.